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AUTHOR Anderman, Eric M.; Midgley, Carol
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ABSTRACT

Studies suggest that the transition to middle school is associated with a decline in motivation and performance for a number of children. This longitudinal study examined changes in motivation in English and mathematics across and after the transition from elementary to middle school. Of particular interest were changes in personal goal orientations (task and ability), perceptions of classroom goal structures (task and ability), academic efficacy, and grades in school. Main effects and interactions of gender, ability, subject, and time were highlighted in the surveys. Data were collected from students as they progressed from fifth to seventh grade. Results suggested that students become somewhat less focused on task goals and more focused on ability goals when they enter middle school. Personal task goals, ability goals, and academic efficacy changed both during and after the middle school transition. Students' task goals declined across the three grades, while ability goals increased across the grade five-grade six transition for English, and then decreased between grades six and seven. Ability goals in math did not change much across the three years. Academic efficacy dramatically decreased across the transition, and then increased some after the transition between grades six and seven. Four tables present statistical analysis. Contains 66 references. (Author/RJM)

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Changes in Achievement Goal Orientations After the Transition to Middle School

ED 396 226

Eric M. Anderman

The University of Kentucky

and

Carol Midgley

The University of Michigan

Running Head: Achievement Goals across the Transition

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Correspondence should be addressed to:

Dr. Eric Anderman
University of Kentucky
Educational and Counseling Psychology
251 D Dickey Hall
Lexington, KY 40506-0017
E-mail: EANDE1@UKCC.UKY.EDU

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Abstract

This longitudinal study examines changes in motivation in English and mathematics across and after the transition from elementary to middle school. We examine changes in personal goal orientations (task and ability), perceptions of classroom goal structures (task and ability), academic efficacy, and grades in school. We examine main effects and interactions of gender, ability, subject, and time. Results suggest that students become somewhat less focused on task goals and more focused on ability goals after the transition. Academic efficacy declines over the transition, but again increases somewhat after the initial transition. We found interactions of time and subject (English vs. math) for personal task goals, classroom task goals, personal ability goals, academic efficacy, and end of year grades. We discuss implications of these findings for development during early adolescence.

Changes in Achievement Goal Orientations After the Transition to Middle School

Studies suggest that the transition to middle level schools is associated with a decline in motivation and performance for a number of children (see Eccles & Midgley, 1989, for a review). The assumption is sometimes made that these declines are related to physiological and psychological changes associated with puberty, and are inevitable. Eccles and Midgley (1989) challenged that assumption, demonstrating that differences in the classroom environment before and after the transition contributed directly to declines in students' expectancies and values in mathematics (e.g., Midgley, Feldlaufer, & Eccles, 1989a; 1989b). They called for additional longitudinal studies following representative groups of children from elementary to middle school and including perceptions of the learning environment (Eccles & Midgley, 1989, p.177). Although a number of transition studies have been conducted since that time, few have measured the learning environment. In addition, few studies have examined subsequent changes in motivation after the transition to middle school. In this longitudinal study we include students' perceptions of the learning environment in both mathematics and English, and we examine the effects of gender and ability level on changes in motivational orientation and perceptions of the learning environment in a sample of students from a working class community. In addition to examining changes over the middle school transition, we also follow the sample of students into the seventh grade, for one additional year after the transition.

Goal Orientation Theory

We also use a somewhat different theoretical framework than prior transition studies. The study conducted by Eccles and her colleagues was based on an expectancy/value model of motivation. Expectancy/value theorists propose that an individual's expectancies for success and the incentive value of the task determine achievement behavior. Achievement behavior is defined in terms of effort, persistence, choice, and performance. In this study we use goal orientation theory as a motivational framework. Goal theory is seen as a more qualitative approach to motivation. The focus is on how students think -- how they think about themselves, their tasks, and their performance. These cognitions are seen as "important educational outcomes in their own right, they are central to the initiation and maintenance of learning" (Ames, 1987, p. 124). Recently, a number of motivational researchers have adopted a goal orientation framework (cf., Ames & Archer, 1988; Anderman & Maehr, 1994; Dweck, 1986; 1992; Dweck & Leggett, 1988; Maehr & Midgley, 1991; Maehr & Pintrich, 1991; Meece, 1991; Nicholls, 1989; Nolen, 1988). These researchers have identified two types of goals that are particularly salient in an achievement setting. Referred to by various names in the literature, we will refer to these two goal orientations as a task goal orientation and an ability goal orientation. When students are oriented to task goals, they engage in academic work in order to improve their competency, or for the intrinsic satisfaction that comes with learning. In contrast, when students are oriented to performance goals, they engage in academic work to demonstrate or prove their competency, or to avoid the appearance of lack of ability relative to others. Considerable research has documented that being oriented to task goals is associated with more adaptive patterns of behavior, cognition, and affect than is an orientation to performance goals (e.g., Ames, 1990; Ames & Archer, 1988; Dweck & Leggett, 1988; Park, Pintrich, & Midgley, 1992; Roeser, Park,

& Anderman, 1992). In the only study to date examining differences in elementary and middle school students' goal orientations, middle school students were more oriented to ability goals, and less oriented to task goals than were upper elementary school students (Midgley, Anderman, & Hicks, 1995). This study was cross-sectional and did not examine differences across subject domains. In addition, it did not examine subsequent changes in motivation after the initial transition year.

Classroom Goal Structures

Recently researchers have been considering the relationship between students' perceptions of the goal structures in their classrooms, their personal goal orientations, and their approaches to learning (e.g., Ames, 1990; Ames & Archer, 1988; Arbreton & Roeser, 1993; Miller & Meece, 1994; Young & Urdan, 1993). In some classrooms, policies and practices are perceived as emphasizing competition and the demonstration of ability relative to others (ability goal structure); while in others, the perceived emphasis is on task mastery, improvement, and intellectual development (task goal structure). Ames and Archer (1988) found that students who perceived an emphasis on task goals in the classroom exhibited more positive attitudes toward learning and used more effective learning strategies than did students who perceived an emphasis on ability goals in the classroom. Arbreton and Roeser (1993) found that students' perceptions of the classroom goal structure were related to their personal goal orientation which in turn was associated with the use of adaptive or maladaptive help-seeking strategies. Young and Urdan (1993) found that perceptions of the goal structures in the classroom were related in expected ways to students' personal goals and to other motivational constructs such as self-efficacy and the valuing of academic work.

An examination of the policies and practices in elementary and middle level classrooms suggests that middle school classrooms emphasize ability goals more, and task goals less than do elementary classrooms (see Midgley, 1993 for a review). In the cross-sectional study described above, middle school teachers and students perceived a stronger school-wide emphasis on performance goals and a weaker emphasis on task goals than did elementary teachers and students (Midgley et al., 1995).

Domain Differences

Studies suggest that students' attitudes and motivation vary by subject domain (e.g., Brush, 1980; Eccles, Midgley, & Adler, 1984; Stodolsky, Salk, & Glaessner, 1991). However, few transition studies have attended to differences in attitudes and motivation across subject matter areas. In a cross-sectional study, Eccles and her colleagues (Eccles et al., 1984) found that self-concept of ability and interest in math were lower after the transition than before, but this was not true not for English. In a longitudinal study conducted by Eccles and her colleagues (Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991), self-concept of ability in English but not in math declined significantly after the transition. It should be pointed out that neither of these studies included perceptions of the learning environment in both math and English. There is still much to be learned not only about changes in students' motivational orientation in math and English, but also about changes in the perceived goal structures during math and English instruction after the transition.

Subgroup Differences

It is also important to determine whether there are subgroups of children who change in differing ways across the transition. It cannot be assumed that the transition will affect all children similarly. Thus we consider the effects of gender and ability level on changes in motivational orientation and perceived classroom goal structures across the transition.

Gender. A number of studies suggest that males and females differ in their levels of motivation for various academic subjects (e.g., Boggiano & Barrett, 1991; Eccles, 1984; Eccles, Wigfield, Harold, & Blumenfeld, 1993). Some research has indicated that boys have more positive attitudes and self-perceptions in math than do girls, whereas girls have more positive attitudes and self-perceptions in English than do boys (Eccles, Adler, & Meece, 1984; Marsh, 1989). Studies of achievement goal orientation provide some evidence that boys are more oriented to ability goals and less oriented to task goals than are girls (Anderman & Johnston, 1994; Arbreton & Roeser, 1993; Young, Arbreton, & Midgley, 1992). Similarly, there is some evidence that boys perceive the goal structure in classrooms and schools as more ability-focused and less task-focused than do girls (Arbreton & Roeser, 1993). When gender has been considered in studies of the transition, relatively few differences have emerged. In Simmons' longitudinal study (Simmons, Blyth, Van Cleave, & Bush, 1979), girls who moved from sixth grade in elementary school to seventh grade in junior high school suffered a decline in self-esteem, whereas boys did not. However, in a transition study conducted by Seidman and his colleagues (Seidman, Allen, Aber, Mitchell, & Feinman, 1994), declines in self-esteem, class preparation, and grade-point average after the transition were similar for boys and girls. Harter and her colleagues (Harter, Whitesell, & Kowalski, 1992), looking at the effects on students of moving from grades five to six, and six to seven both within a school and across schools, found no gender effects. Wigfield and his colleagues (Wigfield et al., 1991) found few gender differences in self-concept of ability and liking of math and English across the transition.

Ability Level. Previous research has shown that students' perceived and actual ability level are related to their motivation and engagement in academic activities (e.g., Eccles & Wigfield, 1985). Studies of achievement goals have found that an orientation to task goals is related to positive patterns of learning, regardless of how able students perceive themselves to be (Elliott & Dweck, 1988; M. Bandura & Dweck, 1985; Nicholls, 1984). However, an orientation to ability goals may be particularly detrimental to students with lower actual or perceived ability. Dweck points out that ability goals focus children on their ability level, and if their ability level is not high, they may be particularly likely to exhibit maladaptive patterns of motivation. However, Dweck (1986) also suggests that high ability children sometimes adopt maladaptive patterns of motivation; therefore, high ability may not universally predict adaptive patterns of achievement motivation.

Ability level has also played a role in students' reactions to the transition from elementary to middle level schools. Wigfield, Eccles, and their colleagues (Wigfield et al., 1991) found that the direction of change in self-concept of math ability across the transition depended on the students' math ability level. Contrary to what might be expected, the mathematics self-concept of the high ability adolescents declined across the transition to junior high school, whereas the math self-concept of lower ability students increased somewhat. Midgley and her colleagues (1989a, 1989b) found that lower achieving students were affected much more dramatically than higher

achieving students by both positive and negative changes in the learning environment across the transition.

General Academic-Efficacy

We include general academic efficacy in this study because it is an important educational outcome that has been related to motivational orientation and academic achievement (e.g., Bandura, 1982, 1993; Midgley et al., 1995; Park et al., 1992; Schunk, 1985; 1989). Efficacy expectations have been found to be a key mediator of developmental outcomes in adolescents (Allen, Leadbeater, & Aber, 1994). A number of studies indicate that feelings of academic efficacy are related to students' goal orientation. For example, in a study of upper elementary students, Park et al. (1992) found that a task goal orientation was positively related to self-efficacy, whereas an ability goal orientation was negatively related to self-efficacy. Anderman and Johnston (1994) found that students who approached the learning of current events with task goals in mind, also tended to feel efficacious at understanding news stories. Midgley and her colleagues (Midgley et al., 1995) found that being oriented to task goals was related to higher levels of academic efficacy in both upper elementary and middle school students. They also found that mean levels of efficacy were higher in middle school students than in elementary school students. This was a cross-sectional study and the measures were not specific to subject matter domains. It is possible that efficacy beliefs relate differently to achievement goals before and after the transition, and may change in different ways in math and English across the transition and subsequent to the transition.

To summarize, the present study builds on previous work in many important ways. First, it is based on longitudinal data collected from students in the last year of elementary school, and the first two years of middle school. Most prior transition studies only have examined changes in motivation during the first year in middle school. Second, it considers the effects of subject domain. In contrast to most other studies examining changes across the transition, perceptions of the classroom learning environment (classroom goal structure) and indices of motivational orientation (personal achievement goals) are assessed separately for math and English. Third, the effects of gender and ability level on changes in personal goal orientation, academic efficacy, and perceptions of the goal structure in math and English across the transition are assessed.

METHOD

Sample

The sample consisted of students from a largely working class community near a major midwestern city. Data were collected when these students were in the fifth grade in elementary school, when they were in the sixth grade in middle school, and again when they were in seventh grade. Students were required to have written permission from their parents in order to participate in the study; 83% received permission. The fifth graders were from six elementary schools in the same school district; this represented all the elementary schools in the district. The students then moved to two middle schools in the same district; again, this represented all the middle schools in the district. From the original sample of students, we use the 283 students who participated in all three years of the study. The study had a 16% attrition rate, which was not surprising, given that this was a working class community that was affected by the closing of

several automobile plants. The sample was 82% European American, 15% African American, and 3% Native American, Indian, or Asian American. Of this total, 21% of the students qualified for free or reduced-fee lunches based on family income.

During the elementary school year, the students were in fifth grade self-contained classrooms except for two classes which also included students from grades three, four, and five. Only the fifth grade students in these two classrooms were included in the current study. At one of the middle schools, students were taught English and math by different teachers. At the other middle school, some of the teachers taught more than one subject to the same students.

Measures

Students were given surveys containing items from the Patterns of Adaptive Learning Survey (PALS) (Midgley, Maehr, & Urdan, 1993) during the spring of their fifth grade year, the spring of their sixth grade year, and again in the spring of the seventh grade. Five constructs were assessed: personal task and ability goal orientation, perceptions of the task and ability goal structure in the classroom, and academic efficacy. Each construct was assessed separately for English and for mathematics, so that a total of ten scales were included. All items were scored on a 5 point Likert-type scale, anchored with 1 = not at all true of me, and 5 = very true of me. We also included end of year grades in math and English in the longitudinal analyses. End of year grades were coded from a low of 1 (failing) to a high of 13 (A+).

On the basis of principal components analysis with VARIMAX rotation, scales were constructed, using the mean value of the items on the scale. We ran similar but separate factor analyses for the items in mathematics and English. Table 1 includes a list of the scales with items and alpha coefficients. The table includes the items as they were written for math. Similar items were used for English, substituting the word "English" for the word "math." The scales used to assess personal task and ability goals are somewhat different from scales used by other researchers. Frequently items assessing personal goals have been phrased in terms of feeling successful or feeling really pleased. Some examples from other studies include, "I feel really pleased when I solve a problem by working hard," (Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990), "I feel most successful when I do the work better than other students" (Nolen, 1988), and "I feel most successful if I get a new idea about how things work" (Nolen & Haladyna, 1990). We have talked to many early adolescents who tell us they rarely feel successful or pleased when they are engaged in academic work. Our scales assess a broader orientation to task and ability goals in a way that is somewhat similar to the work of Meece and her colleagues (Meece, Blumenfeld, & Hoyle, 1988). Their items include "I wanted to find out something new," and "I wanted others to think I was smart." In addition, several of these researchers combine items measuring the importance of doing better than others with items measuring the desire to gain social approval from others ("ego-social" goals). In such cases, an item like "It was important to me that the teacher thought I did a good job" is in the same scale with "I wanted others to think I was smart." In the present study, the items assessing ability goals ask specifically about wanting to appear more able than others.

Our scales measuring the perceived goal structure in the classroom have emanated in particular from the work of Ames (e.g., 1990, 1992). She states that a task ("mastery" is her term) goal orientation "is not dependent on a singular set of strategies or a particular instructional

method, instead it involves a constellation of strategies that are conceptually related to a common achievement goal" (Ames, 1990, p. 17). She uses the acronym TARGET, first articulated by Epstein (1988), to represent the dimensions of the classroom that can be conceptualized as emphasizing task or ability goals. These dimensions are Task, Authority, Recognition, Grouping, Evaluation, and Time. The items in our scales reflect this broad orientation to task and ability goals in the classroom.

Various researchers suggest that measures of efficacy need to be task-specific (e.g., Pajares & Miller, 1995). Our scales measuring academic efficacy are not task-specific, but they are specific to the class that the students are in during each year of the study. Our measure of academic efficacy is clearly different than Bandura's notion of self-efficacy (Bandura, 1982), and Harter's notion of perceived academic competency (Harter, 1982). Specifically, our measure assesses how competent or able students feel at being able to do "hard" work in math and English.

All of the scales have been developed and refined over time with different samples of students, and have demonstrated construct validity in a variety of studies by relating in expected ways to other variables (e.g., Anderman & Young, 1994; Maehr, Midgley, & Colleagues, in press; Midgley et al., 1995; Urdan, Midgley, & Anderman, 1993). In addition, these scales recently have been used to examine achievement goals regarding current events knowledge in a sample of over 5000 adolescents (Johnston, Brzezinski, & Anderman, 1994). Finally, the scales have demonstrated cross-cultural validity in studies done in the People's Republic of China (Maehr & Shi, 1995).

Surveys were read out loud to students in their classrooms. Students were given instructions and sample items to be sure that they understood how to use the scales. Students were assured that their answers would be confidential and that their names would be replaced by ID numbers. Research assistants were available to answer students' questions; however, students did not seem to have a problem with the items or the scaling, and few questions were raised. We also collected information from school records at the end of each school year including students' grades and scores on the Cognitive Test of Basic Skills (CTBS).

RESULTS

Cross Time Correlations

We examined the pre- and post-transition correlations between scores on all measures to assess stability over time (see Table 2). A significant correlation is an indicator of stability, whereas the lack of a significant relationship between measures is an indicator of lack of stability. On most of the constructs there was moderate stability over time, as one would expect. However, there was a striking lack of stability in academic efficacy over the transition and again between grades 6 and 7 after the transition. In fact, the stability coefficient is negative for math efficacy after the transition ($r = -.15$, $p<.01$), thus suggesting that students high in efficacy at the end of grade 6 experience a small decline in efficacy during grade 7, and students lower in efficacy in grade 6 experience a slight increase in efficacy during grade 7.

For all other measures, stability was greater one year after the transition than it was over the transition, suggesting that goal orientations and end of year grades stabilize somewhat by one year after the transition to middle school. Although stability coefficients for personal goals in math and English are nearly identical over the transition, there is greater stability in math goals than in English goals a year after the transition.

Multivariate Analyses Assessing Change Over Time

To examine change over time, we used repeated measures multivariate analysis of variance (MANOVA). Dependent variables included personal task goal orientation, personal ability goal orientation, perceived classroom task goal structure, perceived classroom ability goal structure, academic efficacy, and year end grades. Between subject factors included gender, ability level, and their interactions. Within subject factors included domain (math, English) and year (5th grade elementary school, 6th grade middle school, 7th grade middle school) and their interactions. We formed higher and lower ability groups based on CTBS scores. We formed math and English ability groups using the students' percentile rank on the CTBS. The higher ability group consisted of students who scored in the top half of the distribution of CTBS scores, whereas the lower ability group consisted of the students who scored in lower half of CTBS scores based on percentile ranks. We used CTBS scores rather than end of year grades to form these groups, since we wanted to use a somewhat objective measure of achievement as an independent variable, and since research suggests that the ways in which teachers evaluate students may vary by classroom and subject area across the transition (e.g., Eccles & Midgley, 1989; Hill & Wigfield, 1984). In addition, prior research using both end of year grades and CTBS scores suggests that these measures change in different ways across the middle school transition (Anderman, 1994). For these same reasons, we were interested in using year-end grades as a dependent variable. That is, we wanted to look at changes in grades over time by domain. Table 3 contains the means and standard deviations for each variable at the fifth, sixth, and seventh grades for math and English. Table 4 contains the MANOVA results examining the effects of gender, ability level, year in school, and subject domain on personal and perceived classroom goal orientations, academic self-efficacy, and year-end grades. We found main effects of gender for personal ability goals, $F(2, 278) = 8.51$, $p<.01$, classroom ability goals, $F(2, 278) = 16.24$, $p<.001$), classroom task goals, $F(2, 278) = 4.18$, $p<.05$, and end of year grades, $F(2, 278) = 20.22$, $p<.001$). Males report higher levels of personal ability goals, and perceive classrooms as being more ability focused than do females. In contrast, females perceive their classrooms to be more task focused than do males. In addition, females get higher grades than males.

There were main effects for ability level on several variables, including perceptions of classrooms as being ability focused ($F[2, 278] = 13.55$, $p<.001$), academic efficacy ($F[2, 278] = 38.85$, $p<.001$), and end of year grades ($F[2, 278] = 59.69$, $p<.001$). High ability students get higher end of year grades and report feeling more efficacious than do low ability students. Low ability students perceive their classrooms as being more ability focused than do high ability students.

There were also differences by subject domain (math or English) on a number of the variables. There was a main effect of domain for personal ability goal orientation, $F(2, 278) = 65.48$, $p<.001$, with students being more ability focused in math than in English. There also was a

main effect of domain for end of year grades, $F(2, 278) = 116.79$, $p < .001$, with students receiving higher grades in English than in math. Finally there is a main effect of subject for academic efficacy, $F(2, 278) = 5.47$, $p<.05$. Students report feeling more efficacious in English than in math.

Of particular importance for this study are the analyses assessing the effects of time on the dependent variables. Significant main effects were found for all measures except personal ability goals. Personal task goals ($F[2, 278] = 48.24$, $p <.001$) and perceptions of classroom task goals ($F[2, 278] = 18.54$, $p<.001$) both declined over the three years. Academic efficacy declined across the middle school transition, and then increased between grades 6 and 7, $F(2, 278) = 66.31$, $p<.001$. End of year grades did not change greatly between grades 5 and 6, but declined more so between grades 6 and 7, $F(2, 278) = 9.42$, $p<.001$. Perceptions of classrooms as being ability focused increased across the transition, and then declined between grades 6 and 7, $F(2, 278) = 9.66$, $p<.001$.

For personal task goals, there is a time X subject interaction, $F(2, 278) = 4.00$, $p<.05$. Task goals are higher in math than in English before the transition; by the seventh grade, task goals are higher in English than in math. There also is a gender X subject interaction for task goals, $F(2, 278) = 8.63$, $p<.01$. Females report being more task focused than males in both English and math, although the difference is greater in English.

For classroom task goals, there is a time X subject interaction, $F(2, 278) = 10.09$, $p<.001$. Before the transition, students perceive math classrooms as being more task-focused than English classroom; at the end of sixth grade, students report that English classrooms are more task-focused than math classrooms; and in seventh grade, there is no difference between English and math classrooms.

There are several significant time X subject interactions. There is a time X subject interaction for personal ability goals, $F(2, 278) = 3.51$, $p<.05$. Students report being more ability focused in math than in English, although the difference between subjects is smaller in the sixth grade than in the fifth or seventh grade. There also is a time X subject interaction for academic efficacy, $F(2, 278) = 3.67$, $p<.05$. Students report feeling more efficacious in English in the fifth and seventh grades; in the sixth grade, there is basically no difference between efficacy in math and English. The time X subject interaction for end of year grades is particularly strong, $F(2, 278) = 18.34$, $p<.001$. Grades in English increase slightly between fifth and sixth grades, and then decline slightly between sixth and seventh grades. For math, there is virtually no change in mean grades across the middle school transition; however, after the transition (between grades 6 and 7), there is a decline in math grades.

There are significant gender X subject interactions for academic efficacy and end of year grades. For academic efficacy ($F[2, 278] = 4.97$, $p<.05$), males report feeling more efficacious than females in math, while for English, females report higher levels of efficacy than do males. For end of year grades ($F[2, 278] = 6.04$, $p<.05$), females receive higher grades than males in both subjects, although the gender difference is greater in English than in math.

There is a significant time X ability interaction for academic efficacy, $F(2, 278) = 21.61$, $p<.001$. Hi ability students experience a sharp decline in academic efficacy over the transition, but recover by the seventh grade. In contrast, lower ability students start out in fifth grade with lower initial efficacy than do high ability students. They experience a slight decline over the transition, and then a slight increase between grades six and seven. However, the changes in academic efficacy are much weaker for low ability students than for high ability students.

There is a significant three way interaction of gender X ability X subject for end of year grades, $F(2, 278) = 11.43$, $p<.001$. Both low and high ability students get higher grades in English than in math. Not surprisingly, high ability students (as determined by CTBS scores) get higher grades do low ability students. For high achievers, the difference between math and English grades is greater for males than for females. There also is a significant three way interaction of gender X ability X time for end of year grades, $F(2, 278) = 4.77$, $p<.01$. Although high achieving males get slightly higher grades than high achieving females before the transition, high achieving females get higher grades in both sixth and seventh grades. Low achieving males get lower grades across time than do low achieving females; however, there is a decline in grades for low achieving males between grades 6 and 7, while there is no decline for females.

DISCUSSION

We used goal orientation theory to add to our understanding of how motivation changes after the transition to middle school. This study adds to the small but growing body of research that indicates that for many children, the nature of the learning environment changes in a negative way during early adolescence (e.g., Eccles et al., 1993; Harter et al., 1992; Seidman et al., 1994).

Personal task goals, ability goals, and academic efficacy changed both during and after the middle school transition. Students' task goals declined across the three grades, while ability goals increased across the grade 5-6 transition for English, and then decreased between grades 6 and 7. Ability goals in math did not change much across the three years. For personal ability goals, only interactions with time were significant -- there were no significant main effects for time. Academic efficacy dramatically decreased across the transition, and then increased somewhat after the transition between grades six and seven.

Looking at the domain differences in goal orientations and academic efficacy, we would have to conclude that there were not many differences between math and English in this study. Students were oriented to demonstrating their ability more in math than in English, and they received higher grades in English than in math. The notable decline in academic efficacy immediately after the transition was stronger in English than in math, although efficacy in English increased more between grades 6 and 7 than it did for math.. Why would there be a particularly strong decline in feelings of efficacy in English after the transition? Perhaps teachers can be more creative and flexible in elementary school, where they do not have the time constraints and the large numbers of students that characterize middle school classrooms. Math may not change as

much from elementary to middle school. These changes in English may influence students' feelings of efficacy immediately after the transition. Classroom observations might shed some light on this. Feldlaufer, Midgley, and Eccles (1988) observed math classrooms in sixth grade in elementary school and a year later in seventh grade in junior high school. After the transition, students had fewer choices during math, and there was more whole class and less small group work. Being given choices and working in small groups have been described by Ames (1990) as components of a task-focused goal structure. Perhaps these changes are even more dramatic in English. As researchers continue to examine this period, they may want to include more domain specific classroom observations.

The sample of working class children in our study perceived that their classrooms stressed relative ability more, and mastery and improvement less, after they moved to middle school. Classroom task goals decreased over the transition more in math than in English; however, between grades 6 and 7, perceptions of classroom task goals in English continued to decline, while math goals stabilized after the transition. Perceptions of classrooms as being ability focused increased across the transition, and then slightly decreased between grades 6 and 7. At the same time, recall that there was a dramatic decline in academic efficacy after students moved to the middle school environment, followed by an increase in reported academic efficacy between grades 6 and 7. It is very important that those of us who are concerned with adolescent development attend to the contexts in which these young people learn and grow. In particular, we must be aware that these contexts may change just as young adolescents also are changing.

The decline in academic efficacy after students move to middle school is of particular concern. Feeling efficacious has been associated with positive outcomes in a range of studies in various settings (e.g., Bandura, 1993; Schunk, 1989). In addition, efficacy beliefs have been found to be important mediators of developmental outcomes in adolescents (Allen et al., 1994). It is tempting to say that the work is harder in middle school than in elementary school, and this drop in self-efficacy is predictable. However, there is little evidence to support that, and indeed some evidence that the quality of the work given in middle school is less challenging and demanding than the quality of work given in elementary school (see Eccles & Midgley, 1989 for a review). In addition, for all groups of students, there was a striking lack of stability in both math and English efficacy across the transition. Children are reorganizing their efficacy beliefs when they move to the middle school. These data were collected in the spring of the year, so this is not just a temporary reaction to a new environment. The name of the game, at least in terms of efficacy, has changed in middle school. In contrast, Harter and her colleagues (Harter et al., 1992) found that Time 1 - Time 2 correlations for perceived scholastic competence were moderately stable for groups of students who moved from fifth to sixth grade and sixth to seventh grade, regardless of whether they moved up a grade within a school or to a new school.

There was also a mean decline in end of year grades. This is a result that has been replicated in several transition studies (Kavrell & Petersen, 1984; Seidman et al., 1994; Simmons & Blyth, 1987). However, there were some noteworthy gender differences. For female students, grades actually increased across the middle school transition, but then decreased between grades 6 and 7. For males, mean grades declined across all three grades.

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Changes across time in high and low ability students' grades also varied by gender. While high achieving females' grades increased over the transition and then decreased the following year, high achieving males experienced declines in grades across both years. For the low achieving students, grades did not change greatly, except for low achieving males, whose grades declined between grades 6 and 7. One would expect the low achievers to have lower year end grades than those of the high achievers both before and after the transition, but one has to question why the grades of low achieving males were lower than for females, and why low achievers experienced a particularly strong decline in grades one year after the transition. We have suggested previously that middle school teachers may be using a different basis for grades than that used by elementary teachers (Midgley, 1993). In a conversation with a sixth grade middle school teacher who had previously taught the same grade level in an elementary school, she described this difference. She said that other factors, such as effort and improvement, played a greater role in the assignment of grades in the elementary school than in the middle school. The emphasis on effort and improvement is characteristic of a task goal structure. One has to be concerned about the impact of these declines in grades on lower achieving children. If these children are trying as hard in middle school as they were in elementary school, and if they perceive that they are doing as well as they did in the previous year, then to receive lower grades without knowing the cause could serve to undermine motivation and engagement. Goal theory posits that an orientation to demonstrating one's ability relative to others is associated with negative outcomes, particularly for lower achieving students (Dweck, 1986). It is possible that high achieving students adapt to these changes in grading practices better than do low achieving students. Indeed, Roderick (1992) found that students whose grades decreased the most as they made the transition to high school tended to be those who later dropped out of school.

This study has a number of limitations. In some cases the size of the effects was small. In sixth grade in particular, these middle schools were less traditional than typical junior high schools. Many schools that call themselves "middle schools" do that based on the grade levels they include, and do not engage in practices recommended for young adolescents (e.g., Epstein & Mac Iver, 1990). However these schools were trying to implement some practices at the sixth grade level that were more in line with the middle school philosophy. This study would be stronger if classroom observations had also been conducted. Do observers also perceive a greater emphasis on relative ability and competition among students after the transition, and a reduced emphasis on task mastery, improvement, and intellectual development? In addition, this study was conducted in only one school district, and only 15% of the students were African American. We did not feel that this was a sufficient number of African American students to consider the role of ethnicity. We are just now beginning a transition study involving large samples of both African American and white students in four economically diverse school districts. We will be very interested to see if these changes associated with the transition are similar for African American and white students.

Although we have theorized that middle schools stress relative ability and competition among students more, and effort and improvement less, than do elementary schools (e.g., Midgley, 1993), this is the first empirical evidence based on longitudinal data. Now we need to know more about how those changes influence a variety of student outcomes. Meece, Miller, and Ferron (1995) stress the need to assess children's goal orientations across the elementary school

years. In a study across grades 3, 4, and 5 in elementary school, they reported moderate stability in students' goal orientations across time. The stability coefficients for students' personal goals before and after the transition in our study were somewhat lower than in their study. In addition, they found that as students progressed through school, they became less task-oriented (their term is mastery-oriented) and less ability-oriented (their term is ego-involved). In our study students became less task-focused, while personal ability orientation showed an increase over the transition followed by a decrease in grades 6 and 7 for English, with a very slight decrease across the three grades for math. Perceptions of classrooms as being ability focused increased across the transition, and then declined again a year later. We also need studies examining changes in perceived goal structures and personal achievement goals as children move through middle school into the high school learning environment. Studies of the high school transition have rarely included perceptions of the learning environment, and we know of no longitudinal studies that have examined students' goal orientations during this important developmental period.

There is still much to be learned about the effects of the middle school transition on early adolescent development. We have attempted to fill some of the gaps in the knowledge by examining both math and English, by attending to gender and ability level differences, by following students both across the transition and again one year later, and by using goal theory as the theoretical framework within which to interpret these changes. We believe that goal orientation theory is a particularly promising framework to use in looking at changes in both the learning environment and in students' motivational orientations. We have used this theoretical framework as a basis for collaborating with middle school educators to bring about reform (Maehr, Midgley et al., in press). In addition, we have found that the use of task focused policies and practices in middle school environments may be related to more positive (and less negative) shifts in motivation during early adolescence (Anderman, Maehr, & Midgley, 1996). Our experience tells us that the broad range of policies and practices at the middle school level can be examined, using goal orientation theory as a framework, and that suggestions for change emerge quite naturally. Teachers are very adept at determining which policies and practices emphasize mastery and improvement, and which emphasize relative ability and social comparison.

If we are to understand development, we must consider the context in which development occurs. Virtually every young adolescent in this country attends school. Increasingly, these schools are middle schools or junior high schools. There is still much to be learned about the relation between the learning environment in these middle level schools and adolescent development.

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Table 1. Scales, Items, and Alpha Coefficients

Scale	Items	Math Alpha	English Alpha
Personal Task Goals	I like math work that I'll learn from, even if I make a lot of mistakes.[1] Understanding the work in math is more important to me than the grade I get. The main reason I do my work in math is because I like to learn. I like math work that is really challenging.	71, .75, .77	.73, .80, .85
Personal Ability Goals	I would feel successful in math if I did better than other students. I would feel really good if I were the only one who could answer the teacher's questions in math. I'd like to show my teacher that I'm smarter than other kids in math.	65, .71, .75	.77, .82, .80
Classroom Task Goals	Our teacher tries to find out what students want to learn about in math. Our teacher helps us to see how what we learn in math relates to the real world. Our teacher thinks mistakes are O.K. in math as long as we are learning. Our teacher uses lots of other interesting materials to teach math, not just our textbook. Our teacher makes sure that everyone gets to participate in math class. Our teacher encourages students to find different ways to solve problems in math class.[2]	67, .75, .73	.75, .79, .78
Classroom Ability Goals	Our teacher makes it obvious which students are not doing well in math. Our teacher thinks it's more important to get the right answers in math than to know why they're right.[3] Our teacher gets upset when we make mistakes in math. Our teacher calls on smart students more than other students in math. Our teacher goes on to new topics in math even if we don't understand what we are learning now.	67, .68, .79	.73, .82, .78

[1] Items are worded for math; similar items were used for English, substituting the word "English" for "math.".

[2] For English, this item is worded, "Our teacher encourages students to express their own ideas during English, even if the ideas are different from those of the teacher."

[3] For English, this item is worded, "In English, it's more important to get the right answers than to know why they're right."

Academic Efficacy	Some of the work we do in math is too hard for me. (R) Even if the work in math is hard, I can learn it. If I have enough time, I can do even the hardest problems in math. No matter how hard I try, there is some math classwork I'll never understand. (R)	66, .65, .72 .66, .83, .72

Note. R = reversed item; the first alpha in each cell represents the reliability of the measure administered during the fifth grade, the second alpha represents the reliability for the sixth grade, and the third alpha represents the reliability for the seventh grade.

Table 2.
Stability Coefficients.

	Across Transition (5 to 6)	After Transition (6 to 7)
English Personal Task Goal	.42***	.48***
Math Personal Task Goal	.42***	.54***
English Ability Goal	.35***	.47***
Math Ability Goal	.33***	.54***
English Class Task	.27***	.30***
Math Class Task	.22***	.37***
English Class Ability	.29***	.36***
Math Class Ability	.28***	.36***
English Academic Efficacy	.07	.00
Math Academic Efficacy	-.06	-.15**
Math End of Year Grades	.32***	.54***
English End of Year Grades	.33***	.55***

Note. ** p<.01 *** p<.001

Table 3.
Means and Standard Deviations of Measures in 5th, 6th, and 7th Grades

	5th Grade	6th Grade	7th Grade
Math Task Goals	3.54 (0.99)	3.28 (0.99)	2.87 (1.02)
English Task Goals	3.42 (1.00)	3.20 (1.07)	2.95 (1.05)
Math Ability Goals	2.67 (1.11)	2.67 (1.07)	2.63 (1.05)
English Ability Goals	2.41 (1.07)	2.53 (1.19)	2.36 (1.07)
Math Classroom Task Goals	3.58 (0.77)	3.17 (0.91)	3.22 (0.85)
English Classroom Task Goals	3.48 (0.85)	3.41 (0.92)	3.25 (0.91)
Math Class Ability Goals	2.00 (0.83)	2.24 (0.90)	2.03 (0.91)
English Class Ability Goals	1.98 (0.88)	2.20 (1.02)	2.13 (0.88)
Math Academic Efficacy	3.76 (0.89)	3.17 (0.60)	3.49 (0.97)
English Academic Efficacy	3.86 (0.83)	3.14 (0.60)	3.59 (0.98)
Math Grades	7.98 (3.27)	8.00 (2.83)	6.97 (3.16)
English Grades	8.42 (3.21)	8.89 (2.89)	8.58 (3.13)

Note. Range for grades is 1 (lo) to 13 (high). Range for all other measures is 1 to 5.

Table 4.

Repeated Measures MANOVA's

Variable	Gender	Ability	Subject	Time	Interactions
Personal Task Goals	3.26	0.06	0.99	48.24***	Gender X Subject, 8.63** Time X Subject, 4.00*
Classroom Task Goals	4.18*	1.96	3.60	18.54***	Time X Subject, 10.09***
Personal Ability Goals	8.51**	0.53	65.48***	1.38	Time X Subject, 3.51*
Classroom Ability Goals	16.24***	13.55***	0.01	9.66***	-----
Academic Efficacy	0.27	38.85***	5.47*	66.31***	Gender X Subject, 4.97* Time X Ability, 21.61*** Time X Subject, 3.67*
End of Year Grades	20.22***	59.69***	116.79***	9.42***	Gender X Subject, 6.04* Time X Gender, 3.10* Time X Subject, 18.34*** Gender X Ability X Subject, 11.43*** Gender X Ability X Time, 4.77**

* p<.05 ** p<.01 *** p<.001